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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,746	09/04/2003	Tetsuya Kanbe	16869G-086800US	9055

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EXAMINER	
RICKMAN, HOLLY C	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,746	KANBE ET AL.	
	Examiner	Art Unit	
	Holly Rickman	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7 and 12* is/are rejected.

7)☒ Claim(s) *5 and 8-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/7/04;8/11/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 8-11 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 8-11 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 is rendered indefinite by the limitations "compound-type magnetic head", "induction type", and "spin valve type". It has been held that the use of the term "type" renders an otherwise definite expression indefinite. See MPEP 2173.05(b).

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-4, 6, and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 9-10, 15-16, and 22-27 of copending Application No. 11/012,387. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present claims are obvious combinations of several of the claims set forth in 11/012,387. It would have been obvious to one of ordinary skill in the art at the time of invention to combine several of the features set forth in the claims of 11/012,387 to achieve the presently claimed invention.

For instance, it would have been obvious to use a first amorphous underlayer formed from NiTa in combination with antiferromagnetically coupled hcp Co-based magnetic recording layers (see claims 1, 2, and 9). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the magnetic recording medium claimed in 11/012,387 in combination with a conventional recording apparatus as claimed (see also abstract of 11/012,387 for disclosure of the claimed recording apparatus).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Doerner et al. (US 6537684) as evidenced by Yoshida et al. (US 6506508).

Doerner et al. disclose a longitudinal magnetic recording medium having a substrate, a seed layer formed from a material such as Ta, a bcc CrTi underlayer, and a magnetic recording layer formed from hcp Co-alloy magnetic layers antiferromagnetically coupled across a non-magnetic intermediate layer (see Fig 2; col. 3, lines 17-48). The reference discloses that the substrate may be formed from glass having a pre-seed layer formed from a material such as $Al_{50}Ti_{50}$ thereon (see col. 28-29; col. 5, line 56).

Yoshida et al. is cited as evidence that TiAl (i.e., AlTi) is a B2 structured material. See col. 9, lines 24-28

8. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Girt et al. (US 6964819).

Girt et al. disclose a longitudinal magnetic recording medium having a substrate, a plating layer formed from amorphous NiP, a seed layer formed from a material such as Ta, a bcc Cr alloy underlayer, and a magnetic recording layer formed from hcp Co-alloy magnetic layers

antiferromagnetically coupled across a non-magnetic intermediate layer (see Fig 2; col. 130-53; col. 4, lines 20-28; col. 6, lines 30-33).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Girt et al. as applied above, and further in view of JP2001-209927.

Girt teaches all of the limitations of the claims as detailed above, except for the claimed composition of the NiP layer.

JP 2001-209927 teaches that it is well known in the art to use an amorphous NiP alloy as a plating layer on a magnetic recording substrate wherein the layer is composed of Ni80P20 (see abstract and paragraph [0019]).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a Ni80P20 layer for the NiP layer taught by Girt et al. in view of the teaching by JP 2001-209927 that this particular composition is suitable for a plating layer on a glass substrate.

11. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerner et al. in view of JP2001-209927.

Doerner et al. disclose a longitudinal magnetic recording medium having a substrate, a seed layer formed from a material such as Ta, a bcc CrTi underlayer, and a magnetic recording layer formed from hcp Co-alloy magnetic layers antiferromagnetically coupled across a non-magnetic intermediate layer (see Fig 2; col. 3, lines 17-48). The reference discloses that the substrate may be formed from NiP-plated Al or glass. The reference fails to disclose the use of an amorphous NiP layer as well as the composition of the amorphous NiP layer.

JP 2001-209927 teaches that it is well known in the art to use an amorphous NiP alloy as a plating layer on a magnetic recording substrate wherein the layer is composed of Ni80P20 (see abstract and paragraph [0019]).

It would have been obvious to one of ordinary skill in the art at the time of invention to use an amorphous Ni80P20 layer for the NiP layer taught by Doerner et al. in view of the teaching by JP 2001-209927 that this particular composition is suitable for a plating layer on a magnetic recording substrate.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Doerner et al. or Girt et al., in view of Odai et al. (US 6404604).

Doerner et al. and Girt et al. disclose all of the limitations of claim 12 directed to a longitudinal recording medium for use in a recording apparatus. Both reference fail to disclose the specific features of a recording apparatus using the disclosed recording media.

Odai et al. teach that it is known in the art to use a magnetic recording medium in combination with a combination head having a GMR (spin-valve) read head and an induction

write head. The reference teaches a recording apparatus which includes a combination head structure, a drive unit, an actuator arm and a signal processing unit (see Fig 9).

It would have been an obvious matter of design choice to use the magnetic recording media taught by Doerner et al. or Girt et al. in a conventional recording apparatus such as the one taught by Odai et al. in order to produce a functional recording apparatus.

Examiner's Comment

13. The closest prior art, to Doerner et al. and Girt et al., fails to teach or suggest the claimed amorphous underlayer compositions as required by claims 2 and 4-6.

Of these claims, 2-4 and 6 stand rejected on the ground of non-statutory obviousness type double patenting. Claim 5 is objected to as being dependent upon a rejected claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Holly Rickman
Primary Examiner
Art Unit 1773

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September 26, 2006